M E M O R A N D U M

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

HSE3-5J

DATE: 15 June 1994

SUBJECT: International Harvester Site Health Consultation Request for the Contaminants of Asbestos, Polynuclear Aromatic Hydrocarbons, and Volatile Organic Chemicals Detected within this Site

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TO: Louise Fabinski,
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THRU: Frank J. Rollins, Chief, Response Section III

As we near final preparation of plans to undertake a removal action under CERCLA authority at the former International Harvester Site in Chicago, Illinois, it is necessary to obtain a safe exposure limit for the hazardous constituents listed in the attached three tables identified as Table 1 (pg. 7), Table 2 (pg. 8), and Table 3 (pg. 9).

We have also attached a description of this site (pg. 2), its physical location and characteristics (pg. 3), and varied risk factors we've identified and associated with this site (pp. 5 & 6). The receptor population subject to be impacted by this site's conditions is approximately 27,000 persons of all age groups. Also, the site is inadequately access controlled thus permitting continuous trespass of the local populace across the site during travel to the commuter railroad which is located along the southern edge of this site. During one 7.5 hour visitation of the site, 65 persons were noted to have crossed the site where the listed contaminants were detected.

It is important that this matter of a health consultation be given as timely attention as possible. We would appreciate receipt of this information within 10 days. Any questions that may arise which will serve to expedite this request, will be answered at telephone number 312/353-7615.

Table 1

Sample Analytical Results
For Asbestos
Polarized Light Microscopy
International Harvester Site

Sample Location	Asbestos Present	Asbestiform Mineral Fibers	Other Fibrous Constituents %	Total % Asbestos
AS-1	No	None detected	Cellulose - 10%	0%
AS-2	Yes	Chrysotile - 40%		40%
AS-3	No	None detected	Fibrous Glass - 40% Cellulose - 5%	0%
AS-4	No	None detected	Cellulose - 10% Fibrous Glass - 5%	0%

Table 2

Sample Analytical Results
For Volatile Organic Compounds (ug/L)
International Harvester Site

Sample Location	L-1	L-2	L-3
Chloromethane	U	U	U
Bromomethane	U	U	U
Vinyl Chloride	U	U	U
Chloroethane	U	U	U
Methylene Chloride	U	U	U
Acetone	48	770	610E
Carbon Disulfide	U	U	U
1,1-Dichloroethene	U	U	U
1,1-Dichloroethane	U	U	U
total-1,2-Dichloroethene	U	U	U
Chloroform	U	U	U
1,2-Dichloroethane	U	U	U
2-Butanone	U	170	240E
1,1,1-Trichlorethane	U	U	U
Carbon Tetrachloride	U	U	U
Vinyl Acetate	U	U	U
Bromodichloromethane	U	U	U
1,2-Dichloropropane	U	U	U
Trans-1,3-dichloropropene	U	U	U
Trichloroethylene	U	U	U
Dibromochloromethane	U	U	U
1,1,2-Trichloroethane	U	U	U
Benzene	U	U	U
cis-1,3-Dichloropropene	U	U	U
2-Chloroethylvinylether	U	U	U
Bromoform	U	U	U
4-Methyl-2-Pentanone	U	U	12
2-Hexanone	U	U	21
Tetrachloroethylene	U	U	U
1,1,2,2-Tetrachloroethane	U	U	U
Toluene	U	U	U
Chlorobenzene	U	U	U
Ethylbenzene	U	U	U
Styrene	U	U	U
Total Xylenes	U	U	U

Table 3

Sample Analytical Results
For Polynuclear Aromatic Hydrocarbons
(mg/kg)
International Harvester Site

Sample Location	**S-1**
Naphthalene	110
Acenaphthylene	< 66
Acenaphthene	340
Fluorene	< 66
Pyrene	190
Benzo(a)anthracene	78
Chrysene	270
Benzo(b)fluoranthene	140
Benzo(k)fluoranthene	< 66
Benzo(a)pyrene	< 66
Indeno(1,2,3-cd)pyrene	< 66
Dibenzo(a,h)anthracene	< 66
Benzo(g,h,i)perylene	< 66
Total PAHs	1,128

A. Site Description

1. Removal site evaluation

The International Harvester (IH) Site is occupies an approximate 21 acre tract of land which was formerly operated as a heavy machine industrial manufacturing facility during the years 1903 through 1983. The site is located in a moderately high population area of Chicago. No environmental controls are in place or have been installed to prevent contamination of adjacent communities and locations from airborne migration and dispersal of hazardous particulates and dusts from the Site. Too, access control to the Site is inadequate.

The chief constituents of the wastes disposed and remaining on the IH Site include insulation materials containing hazardous levels of asbestos, various sludges and solvents, acids, and high concentrations of polynuclear aromatic hydrocarbons (PAHs). These materials origin occurred as a result of the company's major manufacturing operations involving metal forging, punching, heat treating, and machining as well as painting, woodworking, and on-site power generation for a period of 81 years. Other materials deposited included demolition and construction debris.

The need for a time-critical action at the IH Site was first recognized during EERB's generation of the newly implemented use of the RISE (Regional Integrated Site Evaluation) form which is meant to assure removal investigations are thoroughly integrated into the site assessment process.

During the inception and conduct of the initial removal investigation at this site in 1991 for EPA by its contractor, Ecology & Environment's FIT (Field Investigation Team) of ground and surface water contamination routes within the periphery of the site were evaluated. FIT also undertook efforts to better characterize or identify the site's hazardous constituents. Samples collected and analyzed for asbestos indicated significantly hazardous levels in all of the samples. Also found in hazardous concentrations were methoxychlor, acenaphthene, fluorene, phenanthrene, anthracene, pyrene, fluoranthene, benzo (a) pyrene, benzo (a) anthracene, 2-methylphenol. There also were excessive concentrations of the contaminants barium, chromium, zinc and sulfate.

2. Physical location

The IH Site is located on the south side of 120th Street in the 1000 west block. The closest surface water body is the Little Calumet River located at a distance of approximately one and one-half miles south of the Site. The nearest residence to the Site is located about 150 feet to the south and the number of persons within one-quarter mile of the Site is currently estimated to be 2,700. Hydrogeologic investigations and hydrographs indicate that the depth of the groundwater aquifer in the vicinity of this site is 70 feet beneath the surface of the Site. A confining layer of low permeability blue clay at a thickness of 40 to 50 feet is shown to be located above this aquifer.

3. Site characteristics

The site is relatively flat with a gentle rise near its center and along the southern edges where it abruptly drops to the height of the prevailing topography along its southern terminus near the commuter railway line.

Over the 81 year period of operation of this site numerous structures were used prior to their demolition in 1983. The highest standing and most prominent structure still upon the Site is the formerly used stack or flue at a height of about 80 feet. Refuse and debris from razed structures remains deposited within and through the Site area to a depth of an estimated 10 to 15 feet.

There is inadequate access restriction to the site affording individual and wildlife uninhibited entry to the site area. As well, private residences near and along the site to the south and southeast indicate a contribution of residents from these homes who routinely stroll within and throughout the site's environs.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

The existing data base indicates that the primary potential contaminants associated with the IH Site are some heavy metals, and semi-volatile and volatile organic chemical compounds, asbestos and cancer causing PAHs. Please refer to Table 1.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) 40 CFR Part 300.415, Paragraph (b)(2), as amended, lists factors to be considered when determining the appropriateness of a potential removal action at a site which is reasonable and necessary to protect public health, welfare, and the environment. The following discussion presents a summary of those factors which are applicable to the IH Site:

a. actual or potential exposure to hazardous substances by nearby populations, animals, or the foodchain from hazardous substances or pollutants or contaminants;

This factor is present at the IH Site due to the presence of possibly large quantities of flammable and hazardous substances detected within the site area where no controls are in place to prevent their migration from the site into adjacent areas. Also, there is numerous evidence of small avian species harm within the site area whereby such wildlife is put at undue risk of illness or death when they are attracted to and come into contact with the organic chemical constituent impoundments found at this site.

b. high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate;

The presence of this environmental threat is manifested by the high volumes and concentrations of asbestos containing materials, PAHs, and volatile organic chemicals detected in the surface soils located on the southeast central periphery of this site. The HNU and OVA instrumentation readings indicated high responses to vapors from the contaminants right at the soil surface.

c. weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or to be released;

This factor is present at the site due to the existence of exposed surface conditions of the soils which are continually subjected to scouring and migratory effects of the prevailing westerly, northwesterly, and southwesterly winds and gales which traverse this site area allowing uninhibited cross contamination and migration of the asbestos and other hazardous

constituent laden materials to fall over adjacent areas off the site area. Mean annual velocity of winds in the area are reported to be between 6.9 and 9.2 miles per hour. This factor contributes to the potential for windblown transport of hazardous particulates to surrounding areas as a result of erosion of the unprotected soils over time which would expose these contaminants and thus increase their likelihood for endangering the health of the local populace and diminution of environmental quality.

d. threat of fire or explosion;

This factor is an ever continuing threat to public safety, welfare and the environment at the site. This environmental threat is present due to the low flash point liquids, sludges, and semi-solids which show ignitability characteristics in some of the constituents found at this site.

e. other situations or factors which may pose threats to public health or welfare or the environment;

This factor exists at the site due to lack of adequate site access controls, open manholes and other slip/fall dangers as well as the lack of warning signs and other means to prevent undue risk of exposure or physical danger to persons who might inadvertently enter the site area.

IV. ENDANGERMENT DETERMINATION

Given the site conditions, the nature of the hazardous substances on the site, and the potential exposure pathways to nearby populations described in Sections II and III above, actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare and the environment.